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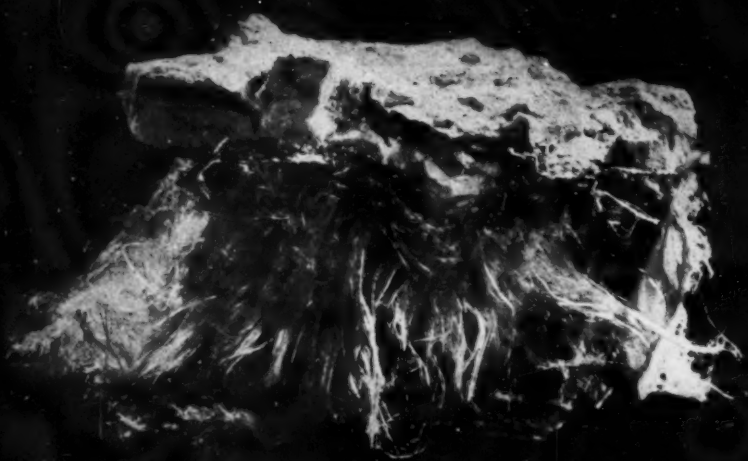

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Entered As Second Class Matter November 23, 1923, at the Post Office at Philadelphia, Pennsylvania, Under Act of March 3, 1879

Volume 39 OCTOBER 1957 Number 4

THE ECONOMIC FUTURE OF CROCIDOLITE & AMOSITE ASBESTOS 2
NEW "FAIL-SAFE" FEATURES SAVE $ IN AUTOMATIC BATCHING OPERATION 14
NEW MOODY FIBRE FLUFFER 20
U. S. RUBBER PLANS RESEARCH PROGRAM 22
"ROCKSIL" MARINE BOARD MARKET CONDITIONS 24
AUTOMOBILE SALES 28
BUILDING 30
NEW ALUMINIZED ASBESTOS CLOTH BY K&M 32
"MARINITE" ASBESTOS SHEET STANDS 40 WEEKS FLAME TEST 32
ASSOCIATED ENGINEERS, INC. 36
Production Statistics 38
Imports & Exports 40
NEWS OF THE INDUSTRY 46
Current Range of Price 56
Stock Quotations 58
Patents 64

ASBESTOS is indexed regularly by Engineering Index, Inc.

SUBSCRIPTION PRICE

United States - - - $2.00 Per Year
Canada - $3.00 Per Year Foreign Countries - $3.00 Per Year
Back Copies - .35 Each Single Copies - (Current) .25 Each
(Payable in U. S. Funds)

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THE ECONOMIC FUTURE OF CROCIDOLITE & AMOSITE ASBESTOS

By W. E. Sinclair, M.I.M.M.

This question must be viewed mainly from two angles, that is first, the industrial outlet, and secondly, the productive potential. The latter category, apart from extraction methods and so on, is governed to a great extent by the available resources of the raw material.

To consider the first category first, there seems little doubt that these amphibole varieties have established a world market in practically every asbestos industrial sphere. Indeed, the steady and growing demand for crocidolite and amosite, once a rather despised group of the asbestos family, is today one of the wonders of the modern industrial age, where at almost every turn, one hears of glass fibres, rock wool, nylon and many other organic and inorganic staples plus many cellulosic fibres. In spite of these intruders into the fabrication of fibrous products, the natural asbestos fibres continue to maintain a superior place in the manufacture of specialized industrial commodities. This is easly accounted for by the fact that in many applications asbestos fibres, possessing the outstanding properties of these amphiboles, in particular, cannot be displaced by substitutes.

The use of artificial fibres of various kinds as a blending medium, in certain creumstances, is admittedly of great value in many ways, not least of which is the economic advantages gained in manufacturing processes.

There is nothing new in the use of cotton, glass or nylon fibres in asbestos textile fabrication, but in more recent applications, modern blending techniques have been extended to the manufacture of many products in the plastic resin industry. There is also a considerable expansion in the development of phenolic-asbestos products and the combination of silicones and other innovations in the commercial field. The use of natural asbestos fibres in all these applications, in which the amphiboles play a not insignificant part, quite definitely emphasizes their essentiality, if only as a minor component in some cases.

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Blue asbestos and amosite may be classed as specialized fibres in certain fields of industry. This is because of their unique and valuable natural properties. Crocidolite, for instance is favored in manufacture of asbestos-cement products for the simple reason that the fibres possess certain outstanding physical properties that are eminently suitable as a component in cement mixtures. Other points include the high tensile strength of the fibres and their harshness, both vital factors in the wet mix process. Other valuable natural attributes are the remarkable qualities of resistance to acids, weathering and similar corrosive action.

Amosite fibres are used in the manufacture of many specialized products, but it takes a leading part in the field of insulation, either as an all fibre product or a constituent in other insulating commodities. The length and strength of the fibres, that tend to keep the mass open, bulkiness and resiliency are only a few of the important properties that not only make the perfect insulant, but withstand shock when the products are subjected to any movement or vibration.

Quite apart from these examples, the property of resistance of these fibres to chemicals, acids, high temperatures and weathering, are such valuable qualities, that they are used in many products where no other fibres are suitable. Few of the fibrous substitutes that are used to replace asbestos withstand the corrosive action of acids and many are not inflammable nor will they stand up to extreme temperatures. The effects of sea water and steam have a deleterious effect on most of the artificial fibres, whereas the Blue and Amosite asbestos are unaffected and therefore of the greatset value in products exposed to these harmful conditions.

The inherent qualities, particularly in these fibres, as would be expected, have naturally resulted in a growing demand by manufacturers. This in turn has been answered by increasing development and production by producers of the raw material.

South Africa is the major producer of crocidolite and, the only producer of the unique variety known as amosite or montasite asbestos.

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In the five year period from 1947 to 1952, the production of crocidolite rose steadily from 10,000 tons to 45,000 tons annually, while the amosite output rose from 15,000 to over 60,000 tons. Since then, however, this remarkable curve in the productive graph has wavered in a somewhat erratic manner, due to some extent to the minor recession in 1953. This position is clearly shown in the following record of production in the past five years:

Production of Crocidolite & Amosite in South Africa (in short tons

VARIETY	1952	1953	1954	1955	1956
'Cape'	24,441	20,883	28,136	34,878	47,688
'Transvaal'	20,295	16,824	15,610	13,964	14,396
Total Crocidolite	44,736	37,707,	43,746	48,842	62,084
Amosite	63,281	38,258	45,922	50,137	50,104
TOTAL:	108,017	75,965	89,668	98,979	112,188

The output in the past year is indicative of what may be expected in future production, although, in actual fact, this does not fulfill the expectations of the industry. The outlay in capital expenditure in exploration, development and the installation of mining and milling equipment, in recent years, has certainly exceeded all the sums ever spent on this field in the previous twenty-five years of its productive life. Yet, with few exceptions, the results achieved, in terms of tonnage extracted, are in no way commensurated with the capital expanded. Why is this, one naturally asks?

Since the question affects the whole field, there can only be one answer, and this seems, without doubt, to be connected with the general tenor of the ore deposits in the crocidolite and amosite areas. The erratic nature of fibre deposition in the rock formation of these deposits is not an uncommon feature. Notwithstanding the continuous, regular and persistent stratification of the mineral bearing ferruginous ironstones, there is a fairly general inconsistency of fibre development. This is not only apparent in the local pinching out of fibre seams but often consists of the complete absence of mineralization laterally or on dip in some areas.

These conditions obviously require a specialized tech-

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nique in the planning of economic development to give maximum profitable returns. Wthout this, in patchwork mineralized areas, stereotype development and orthodox mining methods must inevitably result in low outputs at high productive costs.

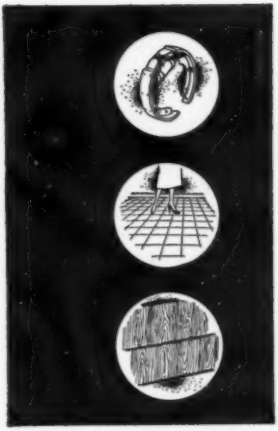
In Australia in the Hammersley Range crocidolte field, production costs are unavoidably high mainly because of the remote and inaccessible locality of the deposits. It would seem, however, that, favored by more regular and persistent mineralization of the asbestos lodes, actual development and extraction of the ore is positive and constant and consequently, less costly. This is assisted by the employment of highly efficient mechanical mining methods that obviate the high wage payrolls of untrained and inefficient labor gangs; such as, the so-called cheap labor so common to South African workings.

Assisted by Government subsidies to ensure profitable exploitation of these deposits, by meeting the high cost of establishing these isolated undertakings, the mines have already proved the justification of this step by steadily increasing output. In the relatively short period of some five years, the increase in production has quadrupled and, considering the growing industrial development in that country it is likely to continue along an upward trend.

The following table indicates the growing output of Blue:

Crocidolite Production in Australia	
Year	Long Tons
1951	1,399
1952	2,573
1953	2,940
1954	3,793
1955	4,487

These tonnages may appear insignificant compared with the South African output, but the development of industrial production in Australia points to a definite need for the extraction of the raw material. This is supported by the fact that in 1955, besides producing nearly 5,000 tons of crocidolite from her own mines, Australia imported 108 tons of crocidolite and 11,775 tons of amosite



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The third producing country, Bolivia, where there exists crocidolite asbestos of exceptional quality, has not figured as a steady producer in recent years. Indeed, the output, averaging about 30,000 Kg annually, has been somewhat erratic, and the potential value of the field as a regular source of supply in the future is problematical.

It is generally accepted that, except for unknown quantities that are probably stock-piled, the bulk of world production today is used for the manufacture of asbestos goods or as auxiliary material in various branches of industry.

The present consumption per annum may be reckoned as follows: Crocidolite—65,000 tons; Amosite—50,000 tons; a total of 115,000 tons.

Based on existing requirements this figure may, of course, change almost overnight, depending on the increase or decrease of certain grades, or of either class of fibre, according to changes in manufacturing technique or a varying demand for different products in commerce. Asbestos, as is well known is closely linked with the general fluctations of world markets.

However, as already visualized, prevailing industrial conditions suggest a fairly stable and firm market for these amphibole varieties. In these circumstances, therefore, it is interesting to consider the potential resources of crocidolite and amosite, to supply the future needs of industry.

According to latest estimates of proved reserves and possible world resources based on prevailing economic conditions, the supply of these varieties indicates an extremely short 'life'. It is imperative that the industry should be aware of this position, since it must certainly affect the long term policy of a great many companies and large sums of money in this sphere.

Although industrial needs are affected by many factors apart from market conditions, such as manufacturing processes, commercial demand and fibre characteristics, all of which tend also to affect even proved reserves, the present estimated resources are considered as follows:

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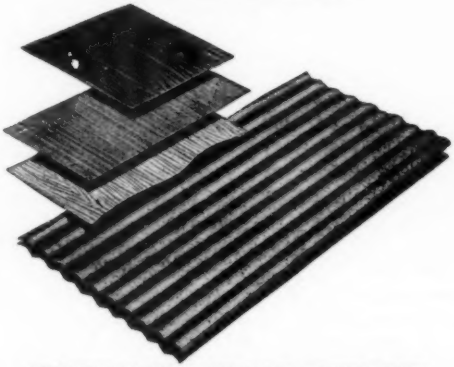

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World Resources: Crocidolite and Amosite 1956

Crocidolite:	(Australia	500,000 tons
	(Bolivia	5,000 "
	(South Africa	750,000 "
	(Others	10,000 "
	Total	1,265,000
Amosite:	South Africa	1,000,000 "
Total: Crocidolite & Amosite		2,265,000 tons

This obviously indicates a 'life' of not more than twenty years, at the existing rate of production and consumption of these fibres.

The phenomenal expansion in the application of asbestos in industry has resulted in new values and conditions which are so well established that it seems that there is every promise of continuing expansion and increasing demands for more asbestos, which means an even shorter 'life', unless there is a commensurate and even greater step up in development and production of fibre.

Finally then, considering the growing success of Blue and Amosite in the industrial field, it appears reasonable that a corresponding increase in producton is an essential long term policy. To do this, that is, to provide adequate and regular supplies for the future, first, and most important, it is necessary to develop substantial reserves, and then to introduce efficient and profitable methods of extraction, in all producing centers.

This undoubtedly is the answer to the economic aspect of these asbestos varieties in the future.

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Latest trend in automatic batch weighing installations is the demand for protective "fail-safe" features. These prevent the costly product and material loss which results when a system continues to operate despite a malfunctioning of one of its components.

The mis-weighing of an ingredient, the incomplete discharge of a hopper, the failure of a conveyor to deliver the proper quantity — any of these can ruin a finished product. And when the product must meet high standards that only constant precise process control can assure, fail-safe provisions are a must.

Guided by these facts, executives of Keasbey & Mattison Co. manufacturers of the well-known K&M Century asbestos-cement pipe, insisted on the latest fail-safe developments recently when they initiated design of a new plant near Santa Clara, California.

In the manufacture of this pipe and its related fittings, three materials are used: silica, portland cement, and hard-to-handle long-fibre asbestos. To insure that the pipe will stand pressures of up to 800 pounds per square inch and have long-life properties, these ingredients must be weighed and proportioned positively and accurately.

Therefore, the following rigid specifications must be met:

1. Automatic weighing and proportioning of these three materials on a predetermined time sequence.
2. Automatically-printed record of each weighing.
3. Extra provisions for occasional manuel operation.

In operation, the raw asbestos is fed through blending mixer to an elevator which discharges into a scale. It is then processed through a Willow Mill and discharged into another bucket elevator along with precisely weighed

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quantities of cement and silica. These three ingredients enter a blendng mixer which discharges and receives material as called for.

The entire process is impulsed from the discharge gate on the blending mixer. When it closes, the discharge feeders on the asbestos fibre scale automatically start operating.

An error at any time during these weighing or proportioning cycles would result in an expensive waste of time and materials if not spotted and corrected immediately. Design of a system which would alert personnel of any such failure was the problem brought by K&M to engineers of Richardson Scale Co., Clifton, N. J. Here design, engineering and construction of a proportioning system could be centered in one company.

In meeting the need for a complete, automatic fail-safe system, Richardson installed a series of new timer alarms. These are incorporated at both ends of the weighing/discharge cycle and individually at each of the three scales.

In operation, these alarms actuate a series of lights and bells which alert personnel of a malfunction at any point in the feed systems, weighings, proportioning or discharges. At the same time, the system automatically shuts down.

For example, a "Tare Check Circuit" throws a selector switch into "Automatic Tare Check" if a scale does not fully discharge a weighing. This prevents all of the scales from refilling. Provisions are also made to stop a weighing operation manually by pressing a "Batch Stop" button.

In addition to the fail-safe alarm features, Richardson engineers were presented with two other special problems. One of these was handling the asbestos fibre. This material tends to arch up in the hopper and requires special care to assure proper streaming-out delivery. Also it takes longer to weigh, which means that the cement and silica scales would have to hold their weighings in readiness over a period of time.

The second problem was the overall flexibility of operation which was needed. Both manual and automatic

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controls for each scale were mandatory, as well as for the system as a whole.

To solve the problem of handling the asbestos fibre, Richardson designed a unique suspension-type weigh hopper with slightly relieved sides which prevent the asbestos from hanging up. It is supplied with a "live-bottom" consisting of 9" Quadruple Screw Discharge to assure even delivery of weighed and proportioned fibre to the Willow Mill.

The silica and cement scales are supplied with Richardson motorized flush-proof discharge gates which have partial adjustable gate openings. The partial opening is held for a predetermined length of time to insure smooth and complete outflow of materials.

Each weigh hopper is equipped with a dial head and components for remote tape recording of weighings.

Additional flexibility in operation has been provided by a Central Control Panel. Each scale can be operated from this panelboard automatically or manually. Proper sequencing is provided by electrical interlocking for the automatic operation and there are special switches for individual feed, discharge and take-away systems.

Fail-safe features were also incorporated into this panel. Pilot lights indicate when scales are running, discharging, or have stopped; when batch is completed; and that each scale is back to zero after a discharge.

The panel also contains motor starters, relays, timers, weight selector dials, push-buttons and jog buttons. With this central control arrangement, material and weight selection may be remotely accomplished and each step in the proportioning operation may be followed.

The hopper scale for the asbestos has a 50 cubic foot capacity and weighs up to 500 pounds per discharge. The hopper suspension scale for the silica has an 18 cubic foot capacity and weighs from 400 to 700 pounds per discharge. The cement weighing unit has a capacity of from 700 to 1000 pounds per discharge and a 24 cubic foot capacity. This scale is fed by a Fuller Airslide with a pneumatically-actuated flapper gate.

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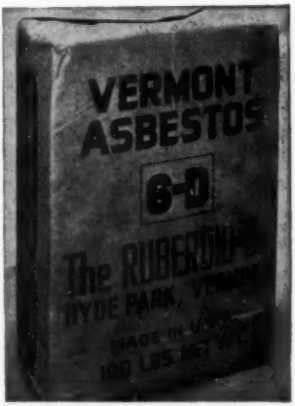

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The cement unit also has provisions to handle a second mixture of materials on a cumlative basis. Upon completion of the cement cycle, a second feeder starts up and delivers a predetermined quantity of this material to the hopper.

Each scale is equipped with drives, observation doors, and columns and bases for tape printed records. Complete dustproof operation is assured by flexible dust sleeves from feeders to hoppers and fully-welded dust-tight construction of the control panel.

The entire system was set up in Richardson's new test shop in Clifton for a full operational test with the exact materials to insure perfect operation when shipped and installed.

NEW MOODY FIBRE FLUFFER

This machine has been developed by Matthew Moody & Sons Ltd. of Montreal, Canada, to successfully open and condition pressure packed asbestos fibre. The machine is simple in operation, and can be used with almost all grades of fibre from shorts 7-R to spinning fibre 3-R. When passed through the MOODY Fluffler ,the fibre is free from lumps and mats, and is restored to its original fluffy prebagged condition. Even valve packed fibre which has been pressed in shipping benefits from passing through the MOODY Fluffer. This machine takes approximately 5 H. P. to operate, and is compact enough to be fitted into almost any production line. Feeding and discharge openings can be adapted to the requirements of the processor. Capacity is from 5-15 tons per hour, depending upon the fibre length. Information can be obtained from Matthew & Sons Ltd., 740 Inspector Street, Montreal, P. Q., Canada.

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Mr. Humphreys made the announcement at a press conference on the eve of the dedication of the company's new research center in Wayne, N. J. The four main buildings, supported by a power house and modern waste treatment plant, were dedicated on September 18th.

"In spending this 120 million dollars, we have three main objectives in the five year program," Mr. Humphreys said.

"We aim to develop a super tire which will do away with the necessity of carrying a spare on both new and used cars.

"The second objective is to bridge the gap between rubber and metals. This will open the door to a new long line of synthetics in the rubber and plastics fields.

"The third objective is to exploit atomic energy as it applies to the rubber industry."

"ROCKSIL" MARINE BOARD

New Rocksil rock wool insulation product, Rocksil Marine Board, is announced by the manufacturers, The Cape Asbestos Company of London, England, who showed it for the first time on their stand (no 13 AA, 1st Floor, Empire Hall) at the Engineering Marine and Welding Exhibition which began at Olympia, London, on August 29th.

Rocksil Marine Board is a rigid, resin bonded slab faced on one side with a fabric that is impervious to moisture. It has a thermal conductivity value of 0.25 Btu/sq ft/hr (°F|in) at normal room temperature. Designed for general comfort and sound insulation on ships' sides, bulkheads, deckheads and partitions in crew and passenger accommodation, it measures 3 ft. by 2 ft. and is available in thicknesses from ½" to 2½" inclusive.

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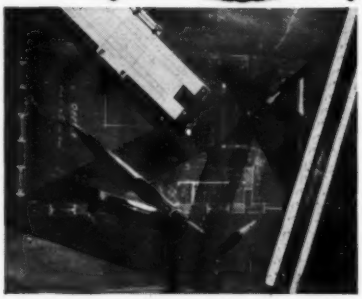

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MARKET CONDITIONS

GENERAL BUSINESS.

The expected upturn in general business for September has not materialized. Predictions for resumption of the boom during the fourth quarter have therefore been revised, even to the point where the more cautious economists are saying the boom is over and the expected period of readjustment is at hand. The aircraft industry has been hard hit by cutbacks in defense appropriations and unemployment in areas dependent on this industry has increased very rapidly over the past two months. While it seems certain that gross national product for 1957 will be greater than ever before, this will be partially due to higher costs caused by inflation. This, therefore, will represent little, if any, net gain for the economy as a whole. In general, while a severe recession is not anticipated, it seems obvious the boom is over and business and industry for some time to come will have to scratch hard to maintain the levels of production which have been attained over the past few years. As usual the situation is spotty. However, at the moment, there seem to be more negative than positive influences at work and these would certainly dictate a cautious attitude on the part of businessmen and investors except in cases where completely new and revolutionary developments are involved.

ASBESTOS — RAW MATERIAL.

As a result of the price increase made effective on asbestos fibre for shipments on and after October 1st, heavier than usual orders were received for shipment during the month of September by customers anticipating the price increase and wishing to put in some stock.

This will no doubt result in some slow down in the output during the latter months of the year.

ASBESTOS — MANUFACTURED GOODS.

Asbestos Textiles. There has been only slight improvement since last month; order bookings and quotations being on about the same level. The outlook for the remainder of the year appears to be reasonably good as

FAST FILTERING FIBRE

FOR ASBESTOS — CEMENT

ADVOCATE MINES LIMITED has extensive reserves of slightly harsh, quick draining, chrysotile asbestos near tidewater in Newfoundland.

PRODUCTION PLANS are being made to begin large scale output of raw fibres in two years' time.

ASBESTOS-CEMENT MANUFACTURERS will find that the unusual quality of the fibre and its location permit low fabricating cost and high product strength.

MODERN MILL DESIGN will permit selective production of any fibre grade in Canadian Groups 4, 5, 6, plus shorts and floats.

We will be glad to forward samples and further information on request.

ADVOCATE MINES LIMITED

Suite 908, 330, Bay Street, Toronto,
Canada.

there is some indication that October and November will cause an influx of orders that have been held in recent weeks because of the desire to reduce inventories.

Asbestos Brake Lining. The volume is still good and prices are slightly soft causing profit squeeze.

Asbestos Paper. Demands for asbestos paper seem to have been stimulated somewhat by the recent price increase, but production capacity is still in excess of market requirement. There has been little or no change in the *Millboard* market from the previous month, although the volume is expected to pick up. The *Saturated Paper* market shows slight gains with sales below production capacity.

Insulation. High Pressure. There appears to be a slight improvement over conditions which existed 30 to 60 days ago in this market. A reasonably high volume of contract business is being let. The outlook for the last quarter is fair as many of the jobs quoted on several months ago are at the maturing stage.

Insulation. Low Pressure. Low pressure pipe coverings are selling at a slightly higher rate this month than last with a slight increase expected due to a larger number of projects (larger projects) being ready at this time. The volume for this year is expected to be about the same as that of last year.

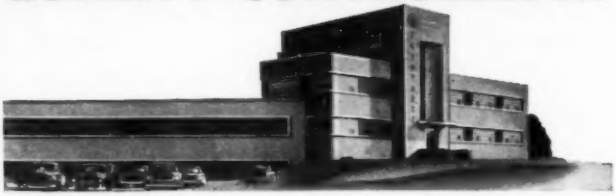
Asbestos Cement Products. At present this market it fairly active but volume for the year is expected to be off 5 to 10% from last year.

Prospects for orders for *Corrugated and Flat* have slowed down during the third quarter and it appears that the fourth quarter will be also be off.

Order placements for *Roofing & Siding* indicate this to be a very good month.

At present demand for all types of *A-C pipes* is a little in excess of production. This has been created by the completion of sizable housing projects that were late starting in the Spring. The outlook appears to be good for the balance of the year with possibilities of all production being consumed, depending entirely on weather conditions.

QUALITY-CONTROLLED...



Flintkote's modern research center at Whippany, New Jersey provides the facilities and technical know-how to determine the right fibres for diversified product uses.

...FLINTKOTE Asbestos Fibres

You, too, can gain from experience. The Flintkote Company stresses quality—has manufactured quality products for over fifty years—uses quality-controlled asbestos fibres produced by Flintkote Mines in many of its products.

A wide variety of asbestos fibres now available for *your* use.

For further information and descriptive brochure—Write: The Flintkote Company, East Rutherford, New Jersey.

FLINTKOTE MINES, LIMITED

(Subsidiary of The Flintkote Company) Thetford Mines, P. Q., Canada

AUTOMOBILE SALES

	July 1957
Passenger Cars	484,718
Motor Trucks	93,924
Motor Coaches	309
	579,951

In July 1956, a total of 522,018 motor vehicles were sold. In the seven months of 1957 the total was 4,517,527.

These figures were supplied by the Automobile Manufacturers Association, New Center Building, Detroit, Michigan.

CLOSE OUTS OF ASBESTOS TEXTILES WANTED

We have cash waiting for your excess or surplus lots of asbestos and fibreglass tapes and other textiles. Your offering will receive our prompt, courteous and confidential consideration. Address Box 10-1-H. "ASBESTOS", 807 Western Saving Fund Bldg., Phila. 9, Pa.

TEST

. . . the added sales volume awaiting you among the nation's roofing and siding contractors. Write to . . .

AMERICAN ROOFER and SIDING CONTRACTOR

425 Fourth Avenue, New York City

ASBESTOS FIBRES

ASBESTOS WASTE

Frank G. Ruggles Co. Inc.

26 BROADWAY

NEW YORK 4, NEW YORK

Now . . .
starting from the usual

WET ASBESTOS-CEMENT SHEET

A NEWLY-DEVELOPED LINE OF MACHINERY

(Patents Marchioli & Gremigni)

for manufacturing

FITTINGS

OF EVERY SHAPE AND DIMENSION

—TOUGH
—RESILIENT
—COMPACT
—WATERPROOF

PLANTS ALREADY IN OPERATION IN OUTSTANDING FACTORIES

Inquiries for Details, Quotations and References are welcome.

ING. G. MARCHIOLI
22 Morgagni, Milan, Italy
Cable: MINITA—MILANO **Phone: 26 67 27**

BUILDING

Contracts for future construction in the United States totalled $2,817,966,000 in August, a decline of five percent from the comparable month last year, the F. W. Dodge Corporation, construction news and marketing specialists, reported. For the first eight months of 1957, the cumulative total of construction contracts amounted to $22,676,652,000, up two percent over the corresponding year-earlier period.

August contracts for non-residential buildings were valued at $1,008,265,000, an increase of eight percent over August 1956. Commercial manufacturing, educational, hospital, and religious buildings all registered gains over a year ago. Non-residential building contracts for the first eight months of 1957 totalled $7,939,670,000, up three percent over the first eight months of 1956.

Residential building contracts in August totalled $1,283,513,000, an increase of five percent over August 1956. A substantial gain in contracts for multi-unit dwellings more than offset the one percent decline reported for one-and two-family houses. The number of dwelling units represented by the August contracts totalled 96,-965, up one percent over a year ago. For the first eight months of this year, residential building contracts were valued at $9,053,764,000, down one percent from the comparable 1956 period. These contracts represented 692,151 dwelling units, a decline of seven percent from a year ago.

Contracts for heavy engineering in August amounted to $526,188,000, down 34 percent from the corresponding month of 1956. For the first eight months of 1957, the cumulative total of heavy engineering contracts was reported to be $5,683,218,000, an increase of seven percent over the first eight months of last year.

WILHELM BURGDORF
Importer of **Raw Asbestos**
P. O. Box 1131, BREMEN, GERMANY

CARTERS (MERCHANTS) LIMITED

SPECIALISTS SINCE **1936** IN THE SALE OF

ASBESTOS FIBRES

ON BEHALF OF **PRODUCERS** OF ALL

VARIETIES & ORIGINS

WINCHESTER HOUSE, OLD BROAD ST., LONDON E.C.2.

CHRYSOTILE ORE-BODY — U.S.A.

Reputable engineering firm blocked out tonnage. Gross value $2,388,500 of Grade #2 and #3, all on ten acres (all adjoining). Ore-body still open to North and West. We possess 590 acres surrounding present ore-body, which could prove-out multi-millions more. We need CAPITAL TO GO INTO IMMEDIATE PRODUCTION.

Interested persons invited to correspond direct with Mr. Samuel Patterman, c/o Maser, 58-19 Myrtle Ave., Brooklyn, N. Y.

NEW ALUMINIZED ASBESTOS CLOTH BY K & M

"Kamklad", a new fire protective, aluminized asbestos cloth which reflects over 90 per cent of radiant heat has been introduced to the market by Keasbey & Mattison Co., manufacturer of a complete line of asbestos products.

Safety garments made of "Kamklad" make it possible for the wearer to withstand temperatures in excess of 2500 degrees Fahrenheit without discomfort or ill-effect. They cut down injuries, save hours of labor because of the drastic reduction of heat fatigue and enable wearers to do jobs in emergencies that would be otherwise impossible.

'MARINITE" ASBESTOS SHEET STANDS 40 WEEKS FLAME TEST

The small effect of 40 weeks continuous flame testing had on a sheet of "Marinite" asbestos insulation material could be seen on the stand of the manufacturers, Marinite Limited of London, England, at the Gas Sales and Service Conference exhibition held at Harrogate from October 1 to 3.

The sheet exhibited on the stand, was tested to incandescence (700 degreesC—800 degreeC) for 3,400 hours by the North Thames Gas Board Industrial Laboratory.

Marinite is now being used widely for building and insulating in one operation gas ovens, kilns, driers and lehrs of every description, and a model oven on the stand showed the method of construction.

"ASBESTOS" recently received from Bell's Asbestos and Engineering Limited, Bestobell Works, Slough, Bucks, England, brochures entitled, "Bestobell Industrial Insulation" and "Viceroy Insulation."

Both brochures contain illustrations, tables, charts and other interesting information. The brochures are also printed in miniatures for giving away at trade shows.

Copies are available to readers. Address, Bell's Asbestos and Engineering ,at the above address.

DRYCOR FELT CO.

STAFFORDVILLE
CONNECTICUT
U. S. A.

Pioneers
and
World's Largest
Manufacturer
of
NEEDLED FELTS
for
ASBESTOS CEMENT PRODUCTS

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ESTABLISHED STANDARD
for
ECONOMY
DRAINAGE
LONGER LIFE

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Synthetic Fibre Content Available to Meet Your Individual Requirement

The assembly line problem of gaskets slipping out of place or falling off before the assembly in which they are used is completed has been solved by the Armstrong Cork Company through development of a gasket spotting machine and a hot melt instant bonding adhesive.

Used in conjunction with newly developed Armstrong T-922 Hot Melt Adhesive, the Armstrong Gasket Spotting Machine spots adhesive on gaskets to hold them in place until an assembly is completed. The inexpensive machine speeds up the operation with a resultant saving in time and labor.

Developed especially for the automotive industry where it is improving efficiency, the machine has practical applications wherever gaskets are applied in assembly line operations.

The 1957 edition of the Building Exits Code, NFPA No. 101, has just been published by the National Fire Protection Association.

The Building Exits Code is not intended as a building code but is so written that it can be utilized as a supplement to building codes and should serve most usefully in dealing with a number of important fire safety matters which cannot be covered in detail in any building code.

The 1957 edition of the Building Exits Code, the latest in a long series of documents in this field dating back to 1913, is available from the National Fire Protection Association, 60 Batterymarch Street, Boston, Massachusetts, in a 256-page illustrated book 4¾ x 7¼ inches, $1.50.

„ Tropag "
Hamburg —:— Ballindamm 6
Importers since 1909 of
ASBESTOS-ORES-MINERALS

high-temperature insulation

reinforcement for asbestos-cement products

plastics

rigid insulations

many industries find many uses for

AMOSITE asbestos fiber

Longest-fibered of all asbestiform minerals, Amosite, when fiberized, increases many times in volume. The rod-like nature of the long, minute fibers keeps the mass open, bulky, resilient. Learn how you can benefit by the unique characteristics of this form of asbestos from the world's largest producers of Amosite.

NAAC

In the United States

NORTH AMERICAN ASBESTOS CORPORATION

Board of Trade Building • Chicago 4, Illinois

In Canada

CAPE ASBESTOS (Canada) Limited

200 Bloor Street East • Toronto, Ontario • Canada

Subsidiaries of The Cape Asbestos Company Ltd. • London

ASSOCIATED ENGINEERS, INC.

Manufacturers with engineering problems or in need of supplementary engineering or drafting talent during peak periods will find a solution in the new, descriptive brochure available from Associated Engineers, Inc., Agawam, Massachusetts.

Founded in 1944, Associated Engineers, Inc. now employs over 800 skilled engineers, designers, draftsmen, technicians, tool makers and machinists in its main offices and plant in Agawam, Mass., and in two branches and three wholly owned subsidiaries in various parts of the United States. The firm does an annual business exceeding six million dollars in approximately a quarter million square feet of space in these six establishments. The main offices and factory are located (in Agawam) directly across the Connecticut River from Springfield, Mass.

The firm's colorful, profusely illustrated brochure stresses the fact that when manufacturers' creative facilities are overloaded or when expert technical aid is needed, there is available from Associated Engineers, Inc. a complete engineering and manufacturing service from idea to finished product. The automation of manufacturing plants is one of the many specialties of the organization.

The brochure explains and illustrates the firm's six basic divisions of Mechanical Engineering, Tool Engineering, the Industrial Laboratory, the Special Services Division (Technical Writing), the Special Products Division and the large manufacturing plant. A listing of companies and governmental agencies indicates that customers of Associated Engineers, Inc. form a noteworthy cross-section of the "Who's Who" of American industry.

The services of Associated Engineers, Inc. range from creating small machine parts to the complete designing, building and testing of special machinery, complicated electronic equipment, intricate devices for national defense, test stands and countless other varied project. "Give

us the idea. We'll develop the product and the tools to make it'' exemplifies the comprehensiveness of A-E service.

''MEET ASSOCIATED ENGINEERS, INC.'' is the can be obtained without obligation by writing for it on title of the brochure which outlines this complete engineering service to manufacturers. A copy of the brochure your firm's letterhead. Address: Associated Engineers, Inc., 168 Silver Street, Agawam, Mass.

The 263 American Standards in the civil engineering and construction field are 263 of the 1687 reasons why it pays American industry to invest more in American Standards

This point is made in a new brochure, just published by the American Standards Association, (ASA), ''1687 Reasons Why You and Your Company Should Support the American Standards Association.''

The 1687 reasons are the 1687 American Standards approved by ASA in almost every field of the American economy.

Copies of the 32-page booklet are available from the American Standards Association, Incorporated, 70 East 45 Street, New York 17, N. Y.

HERMAN HOLLANDER, INC.
154 Nassau Street
New York 38, N. Y.

RHODESIAN CHRYSOTILE ASBESTOS

regular supplies of long Spinning Grades, Filter Grades, shorter Grades (comparable 3T and 3Z)

***Affiliate:* A. J. Hollander (Rhod) (Pvt), Ltd.**
Bulawayo, Rhodesia.

Canada

(Department of Mines, Province of Quebec)

Tons 2000 lbs.

Production for July 1957 (Quebec)	78,048	tons
Other Provinces	5,041	
	83,089	

Total production for July 1956 was 86,511 tons.

Africa (Rhodesia)

(Published by Rhodesia Chamber of Mines)

Tons 2000 lbs.

Production for May 1957	10,948.15	tons
Valued at	£759,742	
Production for May 1956	9,517.21	tons
Valued at	£691,823	

Union of South Africa

(Quarterly Information Report — Dept. of Mines)

Tons 2000 lbs.

	1st Quarter (Jan., Feb. & Mar. 1957)				
	Production	Local Sales		Exports	
	Tons	Tons	Value	Tons	Value
Cape Blue	12,717	166	13,105	10,852	830,123
Amosite	12,422	52	£ 1,324	11,512	£ 539,838
Chrysotile	5,858	968	39,340	3,825	236,754
Anthophyllite	.....	.....	.....	.....	.....
Transvaal Blue	3,347	12	629	3,328	231,279
	34,344	1,198	£54,398	29,517	£1,837,994

Cyprus

(From Inspector of Mines)

	2nd Quarter (ending June 30, 1957)		
	April	May	June
Rock Mined	26,186	177,485	186,737
Rock Treated	.....	36,788	71,659
Fiber Produced	.....	423	2,192
Fibre Exported	200	470	941

UNIBESTOS®

...the single-layer pipe insulation for more protection... bigger savings

Unibestos protects pipelines up to 1200° F. Single-layer construction cuts application costs...seals in more heat at the joints than double-layer insulations. Available in sectional form through 44" O.D.

UNARCO...for the best in asbestos insulation

TEXTILES

Cloth (plain and metallic)
Woven Tapes
Gasket Cloth
Sheet Packings
Front End Tape

FLEXIBLES

Insutube—slip-on
Insutape—wrap-on
Insubestos Felt
Wovenstone®—lace-on
Specialty Insulation

PACKING

High Pressure Rod Packing
Blue Asbestos Packing—acid resistant
Square Braided Packing
Valve Stem Packings—twisted and braided
Joint Runners
High Pressure Packing—semimetallic

UNARCO®

Write for new 40-page catalog

UNION ASBESTOS & RUBBER COMPANY

1111 West Perry Street • Bloomington, Illinois

IMPORTS AND EXPORTS

Imports into U.S.A.

(Figures by Bureau of Census)

Unmanufactured Asbestos:

		June 1957 Tons (2240 lbs.)
From:	Canada	43,941
	Union of S. Africa	1,750
	Australia	466
	Rhodesia	639
	Other Countries	91
		46,887
	Valued at	$4,615,480
By Grades:		
	Crude No. 1, Chrysotile, Rhodesia	18
	Crude No. 1, Chrysotile,, Other Ctys.	1
	Crude No. 2, Chrysotile	10
	Crude, Other, Chrysotile, Rhodesia	543
	Crude, Other, Chrysotile, Other Ctys.	22
	Crude, Blue, Australia	466
	Crude, Blue, U. of S. Africa	719
	Crude, Amosite, U. of S. Africa	1,031
	Textile Fibres, Chrysotile, Canada	1,382
	Textile Fibres, Chrysotile, Other Ctys.	52
	Shingle Fibres, Chrysotile, Canada	5,820
	Shingle Fibres, Chrysotile, Rhodesia	10,515
	Paper Fibres, Chrysotile, Canada	3,582
	Other Fibres, Chrysotile, Canada	33,157
	Other Fibres, Chrysotile, Other Ctys.	6
		46,887

Manufactured Asbestos Goods:

	June 1957 Quantity (lbs.)	Value
Asbestos Yarn, United Kingdom	34,496	$ 31,972
Other Countries	225	421
Asbestos Packing & Lining	26,441	12,811
Asbestos Shingles (Impreg.)	13,568	1,547
Asbestos Shingles (Not Impreg.)		
Canada	1,400,103	136,946
Belgium	322,521	10,645
W. Germany	346,342	15,210

BELL ASBESTOS MINES LTD.

THETFORD MINES, QUE.

CANADA

Producers of

Raw Asbestos Crudes

& Fibres

Sales Representatives

for

Cassiar Asbestos Corporation Limited

Italy	1,315,922	56,907
Other Countries	147,644	10,361
Asbestos Manufactures — Others	.....	1,872
	3,607,262	$278,692

Exports from U. S. A.

(Figures by Bureau of Census)

Unmanufactured Asbestos:

	June 1957 Tons (2240 lbs.)	Value
To: Europe	211	$21,798
Mexico	42	5,668
Other Countries	74	5,730
	327	$33,196

Manufactured Asbestos Goods:

	June 1957 Quantity	Value
Asbestos Cement & Pipe Covering	Lbs. 416,993	$ 71,541
Asbestos Textiles & Yarn	Lbs. 107,960	111,222
Asbestos Packings	Lbs. 124,173	180,481
Asbestos Clutch Facings	No. 142,468	98,609
Asb. Bk. Lng. (Mld.&S.Mld.)	Lin. Ft. 141,578	46,832
Asbestos Brake Lining, Rolls	Lin. Ft. 82,042	39,794
Asbestos Brake Lining, Other	Lbs. 366,227	330,312
Asbestos Construction Materials	Lbs. 4,426,066	443,280
Asbestos Manufactures — Others	.....	28,733
		$1,350,804

Imports of Asbestos by United Kingdom

Imports of Asbestos by United Kingdom
Raw Materials

Tons 2240 lbs.

		July 1957 Tons
From:	Union of South Africa	2,300
	Basutoland, Bechuanaland & Swaziland	1,409
	Rhodesia	3,676
	Canada	4,212
	Other Commonwealth Countries	290
	Foreign Countries	23
		11,910

These figures were supplied by Reuters Economic Services, Johannesburg.

ARE YOU INTERESTED

IN ASBESTOS THAT—

★ HAS A LOSS IN WEIGHT OF LESS THAN 3% ON REFLUXING FOR TWO HOURS WITH 25% w/w HYDROCHLORIC ACID

★ WITHSTANDS HIGH TEMPERATURES

★ HAS GOOD FLEXIBLE FIBRES THAT OPEN UP AND BULK WELL

★ CAN BE SUPPLIED IN FIBRE LENGTHS UP TO 1"

IF SO WE CAN SUPPLY AN ANTHOPHYLLITE WITH THESE FEATURES

CENTRAL ASBESTOS Co. LTD.

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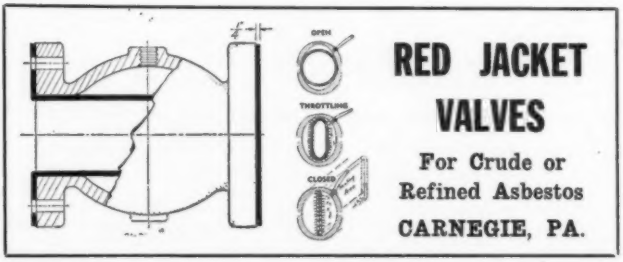
Phone BERMONDSEY 3864 CABLES CENBESTOS LONDON

CENTRAL ASBESTOS (SA) PTY LTD. P.O. BOX 3570 JOHANNESBURG

Exports from Canada

(Published by Dominion Bureau of Statistics)

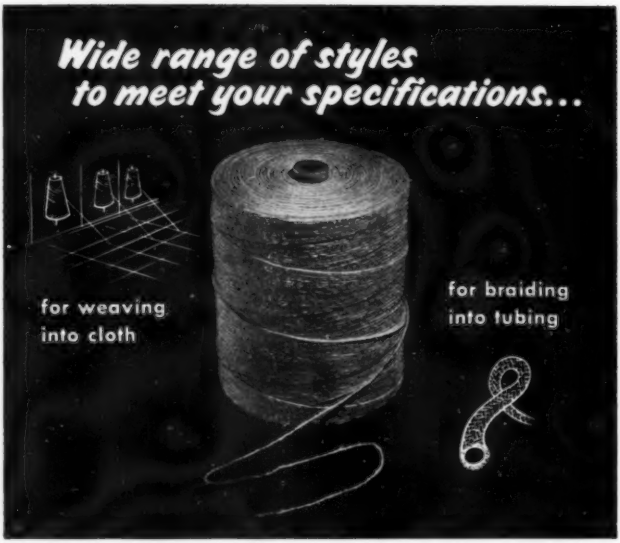
	June 1957 Tons (2000 lbs.)	Value
Unmanufactured Asbestos:		
Crude		
United States	12	$ 8,503
United Kingdom	....	.....
South America	....	.....
Central America & Mexico	....	.....
European Countries	15	11,324
Other Countries	....	.....
	27	$ 19,827
Milled		
United States	11,712	$2,080,409
United Kingdom	3,759	789,052
South America	1,398	46,524
Central America & Mexico	939	275,782
European Countries	16,449	3,189,375
Other Countries	6,053	1,052,466
	40,310	$7,533,608
Shorts		
United States	34,872	$1,739,925
United Kingdom	2,019	93,731
South America	250	15,914
Central America & Mexico	280	16,886
European Countries	7,499	422,343
Other Countries	717	48,908
	45,637	$2,337,707
Grand Total—		
Unmanufactured Asbestos	85,974	$9,891,142
Manufactured Asbestos Goods:		
Brake Lining		$ 37,649
Packing		651
Other Materials		116,392
		$154,692



RED JACKET VALVES

For Crude or Refined Asbestos

CARNEGIE, PA.



J-M Asbestos Yarn

THERE IS sure to be a Johns-Manville Asbestos Yarn to fit your requirements. Made of high quality Asbestos Roving, they are available plain . . . reinforced with cotton or other yarns . . . wire-inserted (copper, zinc, stainless steel, Monel, etc.) . . . or treated . . . in a wide range of grades, cuts and plies.

Their main use, of course, is in being woven into high quality cloths and tapes. They are also braided into tubing of the better class. Other uses include cores and wrappings for electrical resistance wires; packaging for flexible tubing; wire wiping in galvanizing plants and fireproofing electrical cables. For more information, write for brochure TX-2A. Johns-Manville, Box 14, New York 16, N. Y. In Canada, Port Credit, Ont.

Johns-Manville ASBESTOS TEXTILES

QUALITY CONTROLLED FROM MINE TO YOU

NEWS OF THE INDUSTRY

HAPPY BIRTHDAY

David E. Kelley, President, Kelley Asbestos Products Co., Kansas City, Mo., October 16.

H. P. Hansell, Vice President & General Manager, Dutton Asbestos & Supply Co., San Francisco, Calif, October 16.

William F. Reed, President & Treasurer, Asbestos Distributors Inc., Port Chester, N. Y., October 17.

Walter A. RuKeyser, Consulting Engineer, New York City, N. Y., October 19.

E. J. Buczkowski, Director in Charge of Manufacturing, Keasbey & Mattison Co., Ambler, Pa., October 22.

Albert S. Redway, President, Rockbestos Products Corporation, New Haven, Conn., October 22.

Harry E. Humphreys, President & Chairman of Board, United States Rubber Co., New York City, October 24.

L. R. Hoff, Consultant, Johns-Manville Corporation, New York City, October 27.

A. L. Wade, President, Asbestos Insulations, Reg'd., Montreal, Canada, October 28.

H. A. Dutton, Jr., President & Treasurer, Dutton Asbestos & Supply Co., San Francisco, Calif., October 29.

George L. Abbott, President & General Manager, Garlock Packing Co., Palmyra, N. Y., October 31.

F. E. Byrnes, Vice President & Secretary, The Ruberoid Co., New York City, October 31.

V. A. Spina, Treasurer, Scandinavia Belting Co., Newark, N. J., November 1.

A. M. Barringer, President, Acme Insulation Co., North Little Rock, Ark., November 2.

Ernest S. Spirnkmann, President, Sprinkmann Sons Corporation, Milwaukee, Wisc., November 3.

Kozaburo Nozawa, President, Nozawa Asbestos Industrial Co., Ltd., Kobe, Japan, November 4.

William P. Barry, General Manager, Smith & Kanzler Corporation, Linden, N. J., November 5.

Howard W. Allen, Vice President, Johns-Manville Corporation, New York City, November 5.

Howard W. Hanslip, President, Standco Brake Lining Co., Houston Texas,, November 8.

M. Nicolato, Vice President, Pacific Asbestos Cement Products Corporation, San Bernardino, Calif., November 13.

G. A. Rentschler, Chairman of Executive Committee, The Philip Carey Mfg. Company, Cincinnati, Ohio, November 14.

To all these gentlemen we extend best wishes and congratulations on the occasion of their birthdays.

Exporters of

RAW ASBESTOS

ALL GRADES—ALL TYPES

C. J. PETROW & COMPANY (PTY.) LTD.

P. O. BOX 11000 — CABLE: SOTSEBSA

VOLKSKAS BLDG. — 76 MARKET STREET

JOHANNESBURG - SOUTH AFRICA

ASBESTOS TEXTILES

US RUBBER

are manufactured in our own modern plant at Stark Mills, Hogansville, Ga. Spinning and weaving operations are closely controlled for maximum uniformity in asbestos yarns, fabrics and tapes. Specialties developed to meet customers' requirements.

Write: Asbeston® Dept., Textile Division

UNITED STATES RUBBER COMPANY

1230 Avenue of the Americas, New York 20, N. Y.

CYPRUS ASBESTOS MINES, LTD.
ANNUAL REPORT

Operations at the Amiandos Asbestos Mine, at an altitude of 4,500 ft. on the Troodos mountains were severely affected by the emergency. The majority of the Company's labor force is drawn from the mountain villages and more often than not one or more of these villages were under operational curfew throughout the working season. Climatic conditions were good during the year but it is estimated that the equivalent of approximately one normal month's production was lost due to political strikes and necessary security restrictions. Advantage was taken of areas of soft ground, particularly in the shear zone adjacent to a large fault which runs through the mine, and later in the season small quantities of blasting powder were used to clear large boulders from the benches. This resulted in many of the faces losing their regular shape and much preparatory work will be necessary before normal working faces can be again established. Nevertheless 1, 207,251 tons of rock were mined, compared with 1,504,544 tons during 1955, of which 425,097 tons were treated for a production of 7,791 tons of long grade and 5,937 tons of short grade fibres compared with 8,043 tons of long and 5,623 tons of short grade fibres in 1955.

The factory utilized 220 tons of asbestos in the manufacture of asbestos-cement goods compared with 264 tons in 1955. The main items manufactured included 60,114 corrugated and 13,510 flat sheets, 17, 245 pieces of roof ridges and 38,953 items of other products, such as launders and pipes. Local demand for asbestos-cement goods remained high and sales realized £75,757 compared with £80,620 in 1955.

ROCKBESTOS PRODUCTS CORPORATION

Francis B. Becker has joined Rockbestos Products Corporation, New Haven, manufacturers of insulated wires and cables, as an industrial engineer.

Mr. Becker, who has been the supervisory administrative engineering officer at Griffiss Air Force Base at Rome, N.Y., has spent many years in the wire and cable and electrical industries. He will work as an assistant to Works Manager *Alexander S. Basil* at Rockbestos, where he will be assigned to plant layout, method improvement, and cost reduction.

AMERICAN BRAKE SHOE OPENS NEW TECHNICAL SERVICE DEPARTMENT

Robert E. Nelson has been appointed manager of the new Technical Service Department of the American Brakeblok Division of American Brake Shoe Co. The new department will coordinate research work with customers' present and future engineering requirements. Formerly a sales engineer for the division, Mr. Nelson has been with the company since 1949.

CABLE ADDRESS METABEST

METATE ASBESTOS CORPORATION

Producers of

ARIZONA CHRYSOTILE CRUDES

and

FILTERATION FIBRE

Mines & Mill:
SAN CARLOS
INDIAN RESERVATION
GILA COUNTY, ARIZONA

P.O. BOX 1506
GLOBE, ARIZONA

INDUSTRIAL SERVICE COMPANY

Builders of

ASBESTOS CEMENT MACHINERY

Our experienced engineers and machinists offer the industry entire machines built to deliver maximum production.

Your Inquiries Are Invited

1-51 Paterson Avenue E. Rutherford, N. J.

FLINTKOTE PRESIDENT SPEAKS TO HOUSTON FINANCIAL GROUP

The Flintkote Company, a leading manufacturer of building materials, industrial products, boxes and containers, etc., is "preparing vigorously for the dynamic demand that will result from sharply accelerating family formations in the '60s." Perce C. Rowe President said at an investment group meeting in Houston, Texas recently.

Mr. Rowe addressed representatives of investment firms, banks and insurance companies on the occasion of the company's entry into the gypsum business. Formal opening of Flintkote's new gypsum products plant in Sweetwater—the company's first manufacturing operation in Texas—was marked in special ceremonies on September 19th. Later Flintkote will open a new building materials plant in Ennis, Texas.

THE RUBEROID CO. APPOINTS DIRECTOR OF ENGINEERING

The Ruberoid Co. has announced the appointment of *Thomas A. Dent*, as the firm's director of engineering. Mr. Dent has already assumed his new duties with headquarters in South Bound Brook, N. J.

Mr. Dent joined Ruberoid as special assistant to the vice president of manufacture in January 1957 after ten years in the building products manufacturing field.

ASBESTOS MINING INDUSTRY IN CANADA—1956

A ten-page pamphlet under the above title has been issued recently by the Department of Trade and Commerce, Dominion of Statistics, Ottawa, Canada.

It contains various information and statistics—number of asbestos firms, number of employees, salaries and wages, shipment by grades, tonnage of rock mined and milled, fuel and electricity used, power equipment, taxes paid by the Asbestos Mining Industry, and other data of interest.

If interested write the above mentioned Department for Bulletin 6502-571-126—price is 25c.

PHILLIPS ASBESTOS MINES

Producers of

CRUDES

and

FIBERIZED ASBESTOS

The World's Finest Fibres

DRAWER 71 GLOBE, ARIZONA

Mines and Mills in Gila Co., Arizona

DURASORB FELTS

give better drainage because . . .

Their special needled construction permits the water to drain faster, even at higher speeds. This is the result of years of research by experienced Designers, to bring you a *new* type of felt — DURASORB — offering maximum water removal while retaining all the other characteristics for long life, finish, stability and uniformity.

Ask your Albany Felt Sales Engineer for full information on the outstanding performance of DURASORB Felts for asbestos-cement shingles, siding and sheets.

ALBANY
FELT COMPANY
Main Office & Plant, Albany, N. Y.
Other plants: Hoosick Falls, N. Y., N. Monmouth, Me
St. Stephens, S. C., Cowansville, P. Q.

FIBREBOARD PAPER PRODUCTS CORPN.
Creates New Department

Claude M. Stitt, long-time Antioch, California, resident and civic leader has been appointed manager of the newly created Resources Development Department of Fibreboard Paper Products Corporation.

Among the major functions of this important department will be the investigation of major projects in the pulp and paperboard field; the acquisition and management of timberlands; the logging operations on Fibreboard lands; the administration of Fibreboard tree farms; and major water supply and effluent disposal problems.

Mr. Stitt will headquarter temporarily at the San Joaquin Plant at Antioch.

CELLACTITE & BRITISH URALITE LIMITED
DIRECTORS' REPORT

The Report of the Directors of the Cellactite & Uralite Limited and its Subsidiary showed a net profit £58,165 for the year ending March 30, 1957, compared with £56,834 for the previous year.

The Nuralite Company Limited is under active development, and has this year made a modest contribution to the profits, and a progressively increasing contribution is expected in the ensuing years.

There is room for considerable expansion of business. This can be achieved only by the introduction of extra capital. This raises the problem of the terms on which such capital could be obtained to enable the present Shareholders to benefit from such expansion.

K&M—CHANGES IN PERSONNEL
AT SAN FRANCISCO OFFICE

The retirement of *John H. Watrous*, San Francisco District Manager, has been announced by Keasbey & Mattison Company.

Mr. Watrous is a member of K&M's Quarter Century Club and completed 38 years of service. He studied engineering at the University of Washington and graduated in 1913 from Princeton University.

James D. Reichel has been appointed to succeed John H. Watrous who has retired.

Mr. Reichel joined K&M in 1950 as a West Coast salesman and has been Assistant District Manager for one and a half years.

H. W. DONNELLY JOINS
SMITH & KANZLER

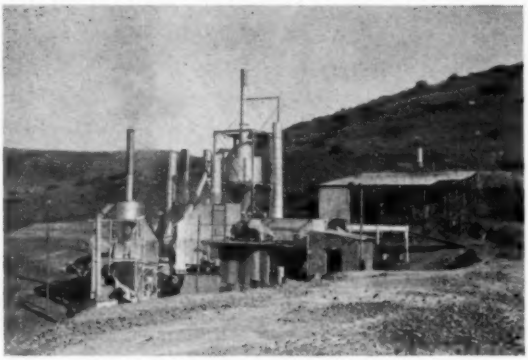
Harold W. Donnelly, former Vice-President and General Manager of Norristown Asbestos Division, Nicolet Industries, is presently occupied in a similar capacity with Smith and Kanzler Corporation, Linden, New Jersey.

Antony Gibbs & Co., Inc.

61 Broadway

New York 6, New York

Tel. Digby 4-6580



View of Blue Asbestos Reducing Mill

ASBESTOS FIBRES

Chrysotiles, Blues, Amosites

Agent in the United States for

S. A. ASBESTOS TRADING (PTY.) LTD.

ROCKBESTOS PRODUCTS CORPORATION

Alexander S. Basil has been named works manager of Rockbestos Products Corporation, New Haven, Conn., manufacturers of insulated wires and cables.

As works manager at Rockbestos, a newly-created position, he is expected to supervise the construction and installation of new facilities in the company's modernization and expansion program.

Mr. Basil joined Rockbestos after thirty years with the United States Rubber Company where he held several executive positions.

K&M APPOINTS MARKET RESEARCH AND SALES TRAINING MANAGER

The appointment of *Hanford Gruher* to the newly created position of Market Research and Sales Training Manager has been announced by Keasbey & Mattison Company of Ambler Pa.

Mr. Gruher was formerly on the General Staff of the Multiwall Packaging Division of the St. Regis Paper Co. in New York City, engaged in market research, product planning, sales programming and sales training. Prior to 1954 he was district sales manager of the Heating, Ventilating and Air Conditioning of the Timkin Silent Automatic Div. of Timkin-Detroit Axle Co.

ARIZONA ASBESTOS

Mined and Milled by

JAQUAYS MINING CORPORATION

1219 S. 19th Avenue

PHOENIX, ARIZONA

Producers of Low Iron Chrysotile Crudes and Filter Fibre

MINES AND MILL IN GILA COUNTY

Coming in Mid-1958:

New Source of Quality Chrysotile

ASBESTOS

ASARCO and Lake Asbestos of Quebec, Ltd., are dredging and draining a 500-acre lake to convert it into one of the richest sources of high quality, longer fibre chrysotile asbestos in the world today.

By next year ASARCO's new major open-pit asbestos mine and newly constructed, modern mill will begin to produce 100,000 tons of asbestos annually. ASARCO has no plans for fabricating asbestos products, so this entire supply will be at your disposal.

If you manufacture or use any of the hundreds of products containing asbestos, you'll want to get acquainted with this dependable new source of supply soon.

ASARCO **Lake Asbestos of Quebec, Ltd.**

A Subsidiary of

AMERICAN SMELTING AND REFINING COMPANY

120 Broadway • New York 5, N.Y.

AMERICAN BRAKE SHOE CO.
Elects Vice President

The election of *William C. Denison*, a pioneer in the development of hydraulic power for industry, as a vice president of American Brake Shoe Company and his appointment to the Operations Policy Committee has been announced.

Mr. Denison is also president of Brake Shoe's Denison Engineering Division, the world's largest manufacturer of low-tonnage hydraulic presses and a leading supplier of hydraulic pumps, motors, controls and components.

Mr. Denison started his career with the Willard Storage Battery Company and later became general manager of the Cook Motor Company which company was succeeded by the Denison Engineering Company which he organized in 1931. Denison Engineering was acquired by Brake Shoe in 1955 and Mr. Denison became a member of the board of directors of the parent company at that time.

CURRENT RANGE OF PRICE

As of October 10, 1957

ARIZONA— Per Ton of 2,000 lbs., f.o.b Globe, Arizona			
No. 1 Crude (soft)	$1,500.00	to	$1,750.00
No. 2 Crude (soft)	900.00	to	1,050.00
No. 3 Crude (soft)	400.00	to	450.00
Filter Fibre (soft)	250.00	to	450.00
No. 1 Crude (semi-soft)	1,200.00	to	1,500.00
No. 2 Crude (semi-soft)	900.00		
No. 3 Crude (semi-soft)	400.00		

CANADA— Per Ton 2,000 lbs. f.o.b. Mine			
Group No. 1 (Crude No. 1)	1,475.00	to	$1,850.00
Group N. 2 Crude No. 2; Crude Run-of-Mine and Sundry	790.00	to	1,200.00
Group No. 3 (Spinning Fibre)	370.00	to	650.00
Group No. 4 (Shingle Fibre)	180.00	to	225.00
Group No. 6 (Waste, Stucco or Plaster)			86.00
Group No.7, (Refuse or Shorts)	40.00	to	80.00

VERMONT—Per ton of 2000 lbs. f.o.b. Hyde Park or Morrisville, Vt.

Group No. 3 (Spinning & Filtering)	$ 353.00	to	$ 383.00
Group No. 4 (Shingle Fibre)	172.00	to	190.00
Group No. 5 (Paper Fibre)	114.00	to	145.00
Group No. 6 (Waste, Stucco or Plaster)			82.00
Group No. 7 (Refuse or Shorts)	39.00	to	72.00

ROOFING
SIDING and
INSULATION

Reaching and selling the nation's top aggressive contractors each month

SELL YOUR PRODUCT IN RSI

BPA audited circulation of 11,500 representing the highest buying power in the trade.

RSI - 45 West 45th St., New York 36

» ATLANTA «

Allgemeine Handelsgesellschaft m.b.H.

BREMEN, Germany **Breitenweg 41**

Importers of Raw Asbestos

ACE ASBESTOS MANUFACTURING CO.

Importers, Exporters, Processors of All Varieties of

RAW ASBESTOS

for Every Use

451 COMMUNIPAW AVE. JERSEY CITY, N. J.

KEASBEY & MATTISON COMPANY
Promotion at Houston Office

The promotion of *William H. Mashburn* to the position of manager of the asbestos-cement pipe department of the Keasbey & Mattison's Houston district office.

Mr. Mashburn joined Keasbey & Mattison Company in 1946 as a salesman in the Houston district. He mas formerly employed by the Arkansas Foundry Company, Little Rock, Ark. as manager of the building material department.

ASBESTOS STOCK QUOTATIONS

(These figures are compiled from the Commercial & Financial Chronicle. No guarantee as to their correctness.)

2nd Quarter (ending June 30, 1957)

	Par	Low	High	Last
Amer. Br. Shoe (Com.)	np	45	49⅜	46½
Amer. Br. Shoe (Pfd.)	100	111	121	113
Armst. Ck. (Com.)	1	24½	28¼	25
Armst. Ck. (Pfd.)	np	79	82	81
Asbestos Corp. (Com.)	np	26	29¼	26½
Carey (Com.)	10	22¾	24¼	23½
Cassiar Asb. Corp.	np	$6.60	$7.20	$6.70
Celotex (Com.)	1	29¼	31½	31½
Celotex (Pfc.)	20	16¾	17⅛	16¾
Certainteed (Com.)	1	8⅜	9⅜	9⅛
Fibreboard Paper Prod. (Com.)	np	22½	26¼	24
Fibreboard Paper Prod. (Pfd.)	100	92	94	94
Flintkote (Com.)	5	37½	41⅛	38⅞
Flintkote, (Pfd.)	np	84	88¼	84
Johns-Manville (Com.)	5	39¼	43	40½
Natl. Gypsum (Com.)	1	37¾	41⅝	40½
Natl. Gypsum (Pfd.)	np	84	87	87
Ray-Man (Com.)	1	50½	52⅞	51½
Ruberoid (Com.)	1	31	33⅛	31⅜
Thermoid (Com.)	1	10¾	14¾	12⅜
Thermoid (Pfd.)	50	44	52¾	45
Union Asb. & Rub. (Com.)	5	6⅞	7⅜	7
United Asb. (Com.)	1	$5.20	$6.00	$5.35
U. S. Gypsum (Com.)	4	58¾	64¼	63
U. S. Gypsum (Pfd.)	100	148	152	152
U. S. Rubber (Com.)	5	39⅞	42½	39⅝
U. S. Rubber (Pfd.)	100	140	142½	140¼

RAW ASBESTOS DISTRIBUTORS

LIMITED

FOR CANADIAN, RHODESIAN
AND SOUTH AFRICAN ASBESTOS

ASBESTOS HOUSE • 77-79 FOUNTAIN ST. • MANCHESTER 2
ENGLAND

BOOK LIST

The Asbestos Factbook, 16 pages: Information in comment form on origin, facts, locations, uses of analyses, qualities, 25c per copy.

Asbestos Mining Methods. By C. V. Smith. (Reprint) 16 pages 25c per copy.

Milling Asbestos. By J. C. Kelleher. (Reprint) 16 pages. Companion article to Asbestos Mining Methods. Both should be in every Asbestos Library, 25c per copy.

Recovery of Raw Asbestos. By Roland Starkey. (Reprint) 6 pages. Supplement to Milling Asbestos. 25c per copy.

Canadian Chrysotile Asbestos Classification. Including latest Quebec Testing Method. January 1, 1949 Edition. 4 pages 25c per copy.

Processing Asbestos Fibres. 8 pages. (Reprint). 25c per copy

Tests for Cotton Content. 4 pages (Reprint). Describing several methods of testing asbestos textile for cotton content. 10c per copy.

Chart—Dollars Cost of Uninsulated Pipe. (Reprint), 20c each

Brake Linings of Various Types. By R. T. Halstead, (Reprint) (12 pages) from August, September and October 1949 "ASBESTOS". Price 25c per copy.

Twelve Estimating Tables, with Chart. Convenient in figuring flange fittings and other areas, $1.00 per set.

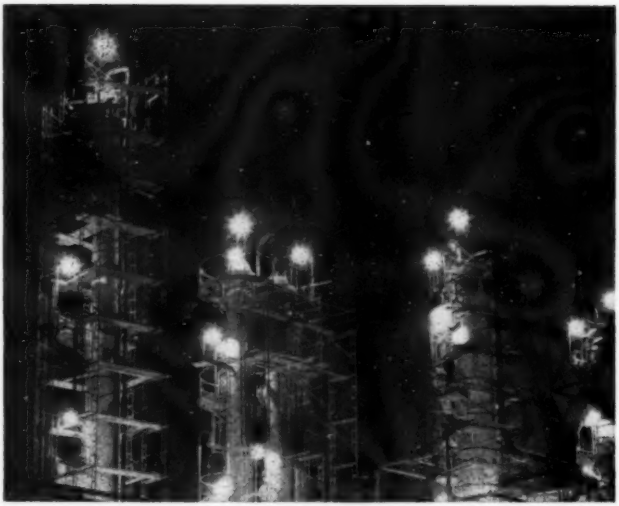
Manual of Unit Prices. For figuring pipe covering and blocks 90c per single copy postpaid. Discount in quantities of 6 or more, postage billed.

Order any of the above from "ASBESTOS," 807 Western Saving Fund Bldg., Philadelphia 7, Pa. Payment should accompany order.

How industries can save space, time and money by using Johns-Manville Asbestos Papers to protect against fire, heat or corrosion, is described in detail in a new brochure now available for general distribution.

The new brochure also includes a chart showing the thickness, weight, tensile strength, tear strength, and the bursting strength of all of J-M's Commercial and Fibroid asbestos papers.

Copies of the new brochure can be obtained by writing Johns-Manville Sales Corporation, 22 E. 40th Street, New York 16, N. Y., and asking for EL-92A.



Drastic reduction of heat loss with

PABCO PRECISION-MOLDED CALTEMP

a Calcium Silicate Insulation

When vapors or liquids are conveyed or held at temperatures up to 1900° F.—when equipment is operated to high heat levels—Pabco insulations cut heat losses to absolute minimums. "Precision-Molded" by a patented process, Pabco's Caltemp and 85% Magnesia pipe and block insulations control temperatures within close tolerances. For data on technical advantages, case histories, or engineering consultation, write . . . or call a Pabco insulation engineer.

INSULATION GUIDE

Temperature	Recommended Pabco Insulation
to 550° F.	85% Magnesia pipe covering • block • cement
to 1200° F.	Caltemp pipe covering • block • cement
to 1500° F.	Prasco 15 C pipe covering • block • cement
to 1900° F.	Prasco 19 C block

PABCO

INDUSTRIAL INSULATIONS DIVISION

Fibreboard Paper Products Corporation
San Francisco 19 • Chicago 54
Houston 4 • New York 16 • Los Angeles

THE TWELVE ESTIMATING TABLES

The Twelve Estimating Tables, with Chart, convenient in figuring flange fittings and other areas, is $1.00 per set.

These tables have been found very useful by estimators in figuring areas, but since we have not for some time published the detailed list, it occurred to us that many would like to know exactly what the tables cover, and order them before the fall work begins. Following is the list.

Sq. Ft. Areas of Pipe Covering.

Mean Sq. Ft. Areas Standard Screwed Fittings.

Mean Area Standard Weight Flanged Fittings.

Standard Weight Flange Areas, Permanent Type.

Standard Weight Flange Areas, Removable Type.

Figuring Hair Felt, 1", 1½", 2".

Anti-Frost Insulation.

Cork Pipe Covering, Outside Area in Sq. Ft.

Ice Water Thick Cork Moulded Fittings Screwed, Outside Area in Sq. Ft.

Brine Thickness Cork Moulded Fittings, Screwed, Outside Area in Sq. Ft.

Special Thickness Cork Moulded Fittings, Screwed, Outside Area in Sq. Ft.

Dusts and Flue Perimeters.

The chart gives an easy way to figure Curved Cylindrical Surfaces.

The tables are printed on paper which will wear well under handling. Orders can be filled immediately upon receipt, write Asbestos 807 Western Savings Fund Bldg., Philadelphia 7, Pa.

We take raw asbestos and fashion it to the needs of a thousand and one different consumers. Closely controlled through all stages of manufacture, asbestos is converted into Fibre, Yarns, Tapes, Cloths, Rovings, Tubing and Webbing widely used for heat and electrical insulation. It is also fabricated into many different kinds of friction materials, including the world-famous Mintex brake and clutch linings.

BRITISH BELTING & ASBESTOS LTD.

Cleckheaton, Yorkshire, England

PATENTS

Abstracts of U. S. Patents on Asbestos and Asbestos Products by Oliver S. North.

Copies of patents can be obtained by sending 25 cents (in coin) to the Commissioner of Patents, Washington 25, D. C., giving the patent number, date it was issued, name of patentee and name of invention.

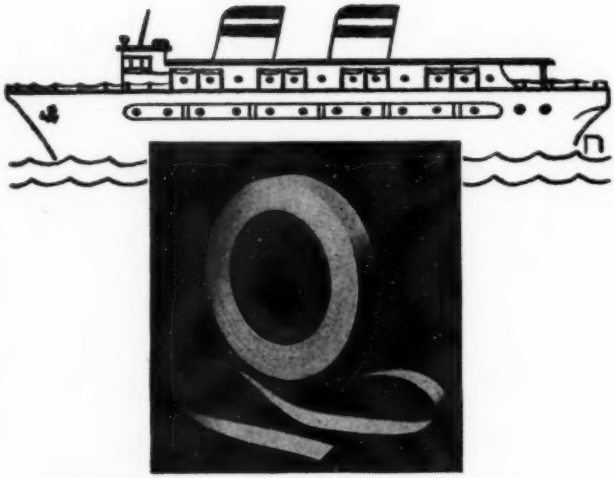
Method of Making Asbestos Insulating Material With Improved Electrical Properties. No 2,804,908. Granted on September 3, 1957 to L. W. Spooner and G. A. Joyner, Jr. (assignors to Westinghouse Electric Co., a corporation of N. Y.). Method of treating asbestos sheet material to produce a hard, dense electrical insulating product having a low power factor, low dielectric constant, and high dielectric strength. Asbestos sheet is impregnated with aluminum phosphate, or a molded mixture of asbestos fibre and orthophosphoric acid is formed, and the material heated for at least one hour at a temperature of at least 600°C. until hydrates and water of crystallization are driven off. Parts made from asbestos sheet material thus impregnated with arthophosphoric acid are particularly useful as are chutes for circuit interrupting devices.

Movable Bed Stratifier With Constant Pneumatic Current. No. 2,803,346. Granted on August 20, 1957 to D. Weston and A. R. MacPherson. Apparatus and method for classifying dry, particulate materials into a fraction having high surface-to-weight ration and a second fraction having a relatively low surface-to-weight ratio. This apparatus and method were particularly designed for removing opened asbestos fibre bundles from host rock and unopened fibre bundles. A shallow bed of the crushed ore is moved mechanically over an air-permeable deck simultaneously with admission of air into the material from below, causing stratification, with the opened bundles of fibre moving to the top of the ore bed. Sufficient suction is applied above the deck to draw off fibres "floating" on rock and unopened bundles. The remainder of the material is discharged continuously from the end of the deck. The separation chamber is preferably operated at sub-atmospheric pressure.

CAREY APPOINTS MERCHANDISE MANAGER

Appointment of *Robert J. Littin* as merchandising manager, Plymouth Meeting Insulation Products, The Philip Carey Manufacturing Co., has been recently announced.

Mr. Littin was previously associated with Owens-Corning Fiberglas Corp. where he held positions in production, sales and advertising during the past 12 years.



A **reliable** tape for shipboard and flame-resistant cable

R/M No. 7504 Novabestos® Tape

DESIGNED for use as primary and secondary insulation.

COMPOSED of 30-35% asbestos spinning fiber of noncritical grade, 60-65% glass fiber, and only 3-5% organic binder.

MEETS the stipulations of Navy Class 4 for total and magnetic iron.

IMPREGNATED with 40% polyvinyl acetate to provide a tough, flexible water- and flame-resistant tape.

HAS tensile and tear strength to spare for efficient taping head application.

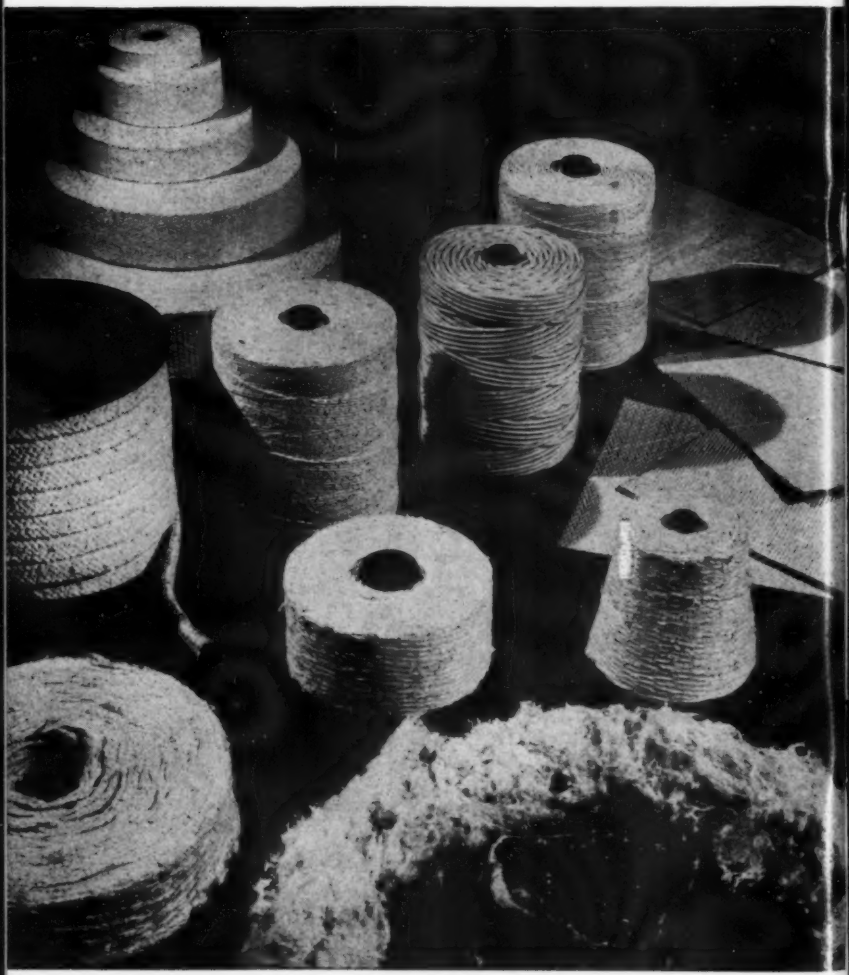
RM

RAYBESTOS - MANHATTAN, INC.
ASBESTOS TEXTILE DIVISION · Manheim, Pa.

FACTORIES: Manheim, Pa.; Bridgeport, Conn.; No. Charleston, S.C.; Passaic, N.J.; Neenah, Wis.; Crawfordsville, Ind.; Peterborough, Ontario, Canada

RAYBESTOS-MANHATTAN, INC., Asbestos Textiles • Laundry Pads and Covers • Engineered Plastics • Mechanical Packings Abrasive and Diamond Wheels • Brake Linings • Brake Blocks Clutch Facings • Industrial Rubber • Rubber Covered Equipment Sintered Metal Products • Industrial Adhesives • Bowling Balls

SOUTHERN ASBESTOS — TEXTILES



SOUTHERN ASBESTOS COMPANY, CHARLOTTE 1, N. C.